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REMARKS

ON

THE COW-POX;

Designed for General Reading:

IN WHICH THE

UNIVERSAL ADOPTION

OF

MR. BRYCE'S TEST

IS STRONGLY RECOMMENDED.

BY JONAS MALDEN, M. D.

PHYSICIAN TO THE WORCESTER INFIRMARY, AND TO THE TWICKENHAM
DISPENSARY.

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MEMORANDUM

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REPORT OF THE COMMITTEE ON THE

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REMARKS
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&c. &c.

WOULD it not appear highly probable, independently of all knowledge of the facts immediately connected with the subject, that if a *whole* living body could be guarded against the power of *one* disease, by having been previously affected by *another*, then that *that* other must not only have affected a part, but the whole of the living body? In other words, can it be for a moment supposed that a merely *local* inflammation could produce so wonderful a change in the constitution *generally*, as to render it for ever after unsusceptible of a disease that attacks the *system*, and is for the most part attended by well-marked constitutional symptoms? Yet Doctors Jenner and Willan, (who, in their respective works, have given a most accurate description of the genuine Cow-pox vesicle, have described the various sources and kinds of spurious vesicles, and thus enabled the medical practitioner

to distinguish with facility and certainty the true disease) have laid so much stress on the local appearances as in a great degree to have drawn off the attention of Medical Men and of the Public from the *constitutional affection*, which must to a *certain degree* attend the progress of the Cow-pox vesicle, if it be our object to secure the person affected with it from subsequent attacks of Small-pox.

Dr. Willan * concludes his admirable description of the genuine Cow-pox vesicle with the following passage: "A vesicle possessing these characters, and passing through these regular gradations, *whether accompanied by any obvious disorder of the constitution or not*, effectually and permanently secures individuals from the danger, and almost universally from the contagion of Small-pox." Now, though this assertion (as the words 'disorder of the constitution,' are qualified by the epithet 'obvious') does not, strictly speaking, deny the importance of the constitutional affection altogether; still the tendency of this and similar remarks coming from such high authority, is, and has been, to direct the attention *too exclusively* to the local disease. The real meaning of these writers, however, appears to have been nothing more or less than this, that from repeated

* See Treatise on Vaccination, p. 9.

experience they were inclined to consider the regular progress of the Cow-pox vesicle, as a sufficient index of so much *constitutional affection* as would secure the individual universally from the danger, if not from the contagion, of Small-pox. The question here occurs, and the answer is of vital importance to the Public—Can the regular progress of the vesicle *alone* be relied upon, in every instance, as giving sufficient security to the vaccinated patient? Recent experience, if I be not much mistaken, has resolved this question in the negative.—Or, if by any means greater certainty can be given to the protecting influence of Cow-pox, ought not those means to be uniformly resorted to? Here the public voice will, I am convinced, most eagerly answer—“ Yes.”

It is the design of the present Essay to take a survey of facts that prove beyond all doubt the preventive power of Cow-pox with regard to Small-pox contagion, when the former has produced the desired effect upon the constitution; to shew the importance of the constitutional affection; and to call the attention of the public to the propriety of adopting in every case of inoculated Cow-pox Mr. Bryce's safe and easy test, by which the existence of *sufficient* constitutional affection may be satisfactorily ascertained.

In making this attempt, I am impelled by no other motives than a desire, as far as my feeble

efforts can extend, to advance the good of my fellow-creatures; and the conviction that the prevalence of the Small-pox, and the present state of the public mind in this part of the kingdom, most imperiously demand (what indeed society has a right to expect from those capable of imparting it) some information on a subject so deeply involving the health, happiness, and lives of the human race.

The Cow-pox has been common in our dairies in Gloucestershire, Wiltshire, Somersetshire, Buckinghamshire, Devonshire, Hampshire, Suffolk, Norfolk, Leicestershire, Staffordshire, and the vicinity of London*, as far back as the memory of man reaches. In many parts of the continent this complaint is as common as in England. In Holstein it is well known, where the sagacity of the peasantry had discovered its power, in preventing the Small-pox. Dr. Jenner's inquiry into the nature of the Cow-pox commenced; it appears, about 1777. His attention to this singular disease was, as he tells us, first excited by observing, that many of those he was called upon to inoculate, *resisted every effort to give them the Small-pox*, having undergone, as he found, a disease they called the Cow-pox, con-

* Lettsom's Obs. on the Cow-pock, p. 16.—P. Moore's Reply to the Anti-Vaccinists, p. 43.

tracted by milking cows affected with a peculiar eruption on their teats. It appears on the nipples of the cows in the form of irregular pustules. At their first appearance, they are commonly of a palish blue, or rather of a colour somewhat approaching to livid, and are surrounded by an erysipelatous inflammation. These pustules, unless a timely remedy be applied, frequently degenerate into ulcers, which prove extremely troublesome, the animals become indisposed, and the secretion of milk is much lessened;—inflamed spots now begin to appear on different parts of the hands of the domestics employed in milking, and sometimes on the wrists, which quickly run on to suppuration, first assuming the appearance of the small blisters produced by a burn. Most commonly they appear about the joints of the fingers and at the extremities; but whatever parts are affected, if the situation will admit, these superficial suppurations put on the circular form, with their edges more elevated than their centre, and of a colour distantly approaching to blue;—absorption takes place, and tumours appear in each arm-pit. *The system becomes affected*, the pulse is quickened; and shiverings, with general lassitude and pains about the loins and limbs, come on. The head is painful, and the patient is now and then affected with delirium. These symptoms varying in their degrees of violence, generally continue from one

day to three or four, leaving ulcerated sores about the hands, which, from the sensibility of the parts, are very troublesome, and commonly heal slowly, frequently spreading like those from which they sprang.

Such is the disease when casually communicated by the cow to the human subject.—The extent and number of the vesicles in this way produced, and the violence of the inflammation which accompanies them, are perhaps sufficient to account for the severity of the constitutional symptoms. This disease cannot, however, be called a very mild one: yet this was the affection which Dr. Jenner described when in his “*Inquiry into the causes and effects of the Variolæ vaccinæ, &c.*” published in June 1798, he first announced the extraordinary fact, “that the person who has been *thus* affected is for ever after secure from the infection of Small-pox; neither exposure to the Small-pox effluvia, nor the insertion of the matter into the skin producing this distemper.” In proof of this Dr. Jenner adduced a great number of cases. In one instance, the matter of Small-pox was inserted into both arms of a female without producing any further effect than local inflammation. This subject had been affected with the casual Cow-pox twenty-seven years before. Another woman, who had had the Cow-pox thirty-one years before, was inoculated also with the matter of Small-pox. “An efflorescence of a palish red colour soon appeared

about the parts where the matter was inserted, and spread itself rather extensively, but died away in a few days without producing any symptoms of Small-pox." She was afterwards repeatedly employed as a nurse to Small-pox patients without experiencing any ill consequences.

During the investigation of the casual Cow-pox Dr. Jenner was stricken with the idea, that it might be practicable to propagate the disease by inoculation, first from the cow and then from one human subject to another. His first experiment was made in the spring of 1796, on a lad of the name of Phipps, with matter taken from the hand of a young woman who had been accidentally infected by a cow. As the *indisposition that attended it was barely perceptible*, he could scarcely flatter himself that security from Small-pox would follow; but on the lad's being inoculated with Small-pox some months afterwards *he proved to be perfectly secure*. This individual was again inoculated with Small-pox matter in its most active state, nearly five years afterwards—again in the spring of 1804—and again, for the fourth time, in May 1805—and *each time without any effect*.

Dr. George Pearson, Physician to St. George's Hospital, in "An Inquiry concerning the History of the Cow-pox, principally with a view to supersede and extinguish the Small-pox," (published in 1798,) examined with that philosophical caution, for which he is so deservedly extolled, the nature

and force of the evidence which Dr. Jenner had adduced in support of the facts he had stated, and gave in addition the results of his own experience, and those of other professional men.—Dr. Pearson's rigidly conducted inquiry gave only additional weight to the evidence Dr. Jenner had brought forward. He laid great stress on the presence of *Cow-pox fever*, meaning by this a specific constitutional affection; and saw reason to conclude that when the Cow-pox infection produces the peculiar local disease belonging to it, *without the disorder of the constitution*; the constitution is liable to be infected by the Small-pox infection; and that in this respect it resembles the Small-pox.

Cow-pox inoculation was adopted by the Small-pox and Inoculation Hospitals as early as January 1799. Between that time and December 1, 1802, 11,800 patients were vaccinated; of whom 2500 were afterwards submitted to inoculation with Small-pox matter, *but without effect*; and nothing adverse was heard of amongst the remainder, though crowded in places where the Small-pox was prevalent*.

Early in 1799, Dr. Jenner published "Further Observations on the Variolæ Vaccinæ, or Cow-pox."—This paper contained the two following valuable statements.—Mr. Darke, Surgeon, at

* Medical Journal, vol. ix. page 194.

Stroud, in the spring of the year 1796, inoculated with Small-pox men, women, and children, to the amount of about seventy. Many of the men did not receive the infection, although inoculated at least three times, and kept in the same room with those who actually underwent the disease, and who occupied it during the whole time they were passing through it. Being anxious that they should in future be secure against it, he was very particular in his inquiries to find out whether they had ever previously had it, or at any time been in the neighbourhood of people labouring under it. But after all, the only satisfactory information he could obtain was that *they had had the Cow-pox.*

Mr. Fry, Surgeon, at Dursley, during the spring of the year 1797, inoculated with Small-pox fourteen hundred and seventy-five patients of all ages, from a fortnight old to seventy years; amongst whom there were nearly thirty who had previously gone through the Cow-pox. *There was not a single instance of the Small-pox matter producing any constitutional effect on these people.*

From the body of evidence now before the public, volumes might be filled with statements of similar facts. Their relevancy to the subject now under consideration is sufficiently obvious; for what but *some general effect on the constitution* of these individuals secured them from the contagion of Small-pox, to which they were so perseveringly

exposed? It may be objected that the constitutions of some persons are naturally such that they resist to a great degree the influence of many contagious diseases, and that these individuals might be of this description. If this were the case, then the circumstance of all these peculiarly favoured beings having been found upon inquiry to have been previously affected with the Cow-pox is a very remarkable coincidence indeed; the glaring improbability of which is alone a satisfactory answer to the objection. *A constitutional affection* then had in these individuals been produced by the Cow-pox, of a nature and degree that rendered them invulnerable to the attacks of Small-pox contagion: and I am of opinion, that, if we could secure in every case of vaccination, such constitutional effect, we should be enabled confidently to predict future exemption from the contagion of Small-pox.

Dr. Woodville's work, entitled, "Reports of a Series of Inoculations for the Variolæ Vaccinæ, or Cow-pox; with Remarks and Observations on this Disease, as a Substitute for the Small-pox," (published 1799) contains the following statement, which proves, incontestably, the *influence of Cow-pox on the constitution*, as an *antagonist* (if I may so speak) of the Small-pox:

"Twenty-eight patients were on the same day inoculated with the matter of Cow-pox, and that of the Small-pox, mixed together in equal quantities, in order to try which would prevail."

“ The result was that, in more than one half of the patients thus inoculated, the local affection distinctly assumed the characters of the Cow-pox ; in the others, it more resembled the Small-pox ; but in none of them was there much indisposition, or many pustules.”

What renders this experiment of greater weight in the argument, than at first sight it would appear, is a circumstance overlooked at the time by Dr. Woodville, but which he afterwards acknowledged, that these individuals (the scene of the experiment being the Small-pox and Inoculation Hospitals) were, during the experiment, in the midst of an atmosphere infected with the contagion of Small-pox.

Many instances are on record, where Small-pox, being contemporary, or nearly so, with Cow-pox, the former has been modified by the latter.

A most striking proof of this is given by Dr. Derenzy, in the correspondence of the directors of the Cow-pox institution of Dublin. A child had been inoculated with Small-pox, and on the same day Dr. D. inserted the matter of Cow-pox ; the Small-pox pustule and Cow-pox vesicle exhibited the usual appearance, *but no eruption ensued* ; the child was more indisposed than usual in Cow-pox, but not so much as all around it, who had only been inoculated for the Small-pox.

Mr. Roulston, in the same publication, mentions that he vaccinated five children in the same

family; the Small-pox appeared on one the third day; *the other children went regularly through the stages of Cow-pox, and did not take the Small-pox, though lying in the same bed with the child labouring under it.* Mr. Charnly, Surgeon of the South Cork militia, mentions a case of Small-pox and Cow-pox proceeding together, the child having imbibed the former disease without his knowing it; *the Small-pox was the very mildest he ever saw.* Mr. Brady, Surgeon of the Leitrim militia, mentions a case where vaccination *suspended the progress of Small-pox:* and Dr. Hall, of the Roscommon militia, has in many instances succeeded in preventing the Small-pox from spreading, by vaccinating children in the same house with others labouring under that disease*.

Mr. Hennen, Deputy Inspector of Military Hospitals for North Britain, whose very extensive experience on this subject, makes his testimony of the greatest value, in remarking on the above and many similar facts, says,

“ So perfectly convinced am I of the *preventing* and *modifying* powers of the vaccine inoculation, that I should never hesitate about employing it, even though it were probable that my patient had

* The facts mentioned in this paragraph, are collected by Mr. Hennen in his Communication in the Ed. Med. and Surg. Journal for October, 1818, p. 455.

imbibed the Small-pox infection ; nor should I be deterred from the practice, by the idle suppositions of the nurse that I was too late, or the learned objection of the doctor that the two diseases could not coexist."

In " A Continuation of Facts and Observations relative to the Variolæ Vaccinæ or Cow-pox," published by Dr. Jenner, in 1800, two letters are inserted from Dr. Marshall, of Eastington, Gloucestershire, to the author, giving the result of an extensive practice in inoculation for the Cow-pox. Of four hundred and twenty-three patients, inoculated with Cow-pox matter by Dr. Marshall, two hundred and eleven were subsequently inoculated with the matter of Small-pox ; *but every one resisted it.* He accidentally inoculated a woman and four children for the Cow-pox, with a lancet that had been previously charged with the matter of Small-pox, *but the disease which followed proved to be the genuine Cow-pox.*

These facts require no comment. They speak for themselves. Thousands and tens of thousands of similar observations, supported by authorities the most respectable, *now* form the broad basis of truth, on which the Jennerian discovery rests. They have not only stood the test of a long and accurate investigation by the Parliament of Great Britain, confirmed by a reward to the discoverer ; but have caused the custom of inoculating for the Cow-pox to be patronised by all enlightened and

liberal men*, and by numerous public institutions; and to be adopted by foreign nations, who have, I am sorry to say, been much more active than ourselves in suppressing Small-pox at home, and in extending its invaluable antidote to every quarter of the globe.

In Denmark, where inoculation for the Small-pox is prohibited by legislative enactments, that loathsome, horrible, and fatal disease is exterminated.

In the address of the Royal Jennerian Society for 1803, (page 49) we are informed that “ In a great proportion of cases (of inoculated Cow-pox) there is no *perceptible* indisposition; nevertheless, the person vaccinated is not the less secure from the future infection of the Small-pox, *provided the progress of the vesicle has been regular and complete:*” an opinion similar to that of Dr. Willan, before alluded to.

* “ Small-pox was the source of no inconsiderable portion of the income of every medical practitioner. Jenner’s discovery was a touchstone, to detect what proportion of selfishness alloyed the human heart. It was calculated to make known, whether the scenes of misery, which medical men are compelled to witness, blunt their feelings. The result has certainly reflected distinguished honour on the faculty; for the plan to exterminate the Small-pox has been zealously adopted by the medical men of every part of the world which it has reached.”

Moore’s Reply to the Anti-vaccinists, page 4.

Nothing can be more evident than that the inoculated Cow-pox, by its transference from the cow to the human subject, and afterwards from one human subject to another, is rendered much milder than the casual Cow-pox ; still this very mild disease secures, infallibly, nine hundred and ninety-nine in every thousand inoculated with it from the contagion of Small-pox *. The power of imparting this security must alone depend on its *affecting the constitution generally* ; and the milder the disease the greater the difficulty of detecting the constitutional affection : besides, from analogy, we may conclude, that this saving power does not result so much from the *degree* as the *kind* of constitutional affection : and how are we to judge of this ? The regular progress of the vesicle alone is for the most part relied on by practitioners : but this, it must now be acknowledged, from some pe-

* “ It appears, from the present state of our information, that one person in three hundred *dies* from inoculated small-pox, and that there is, perhaps, one failure in one thousand after vaccination. An individual, who, under such circumstances, should prefer the inoculation of his children for the Small-pox, to submitting them to vaccination, would be guilty of an improvidence similar to that of a parent who should choose for his son a military service, in which there was *one chance in three hundred of being killed*, in preference to a station where there was *only one chance in a thousand of being slightly wounded*.”

Report of the Nat. Vac. Estab. for July, 1811.

culiarity in the constitution of the patient, or from some other cause, has occasionally proved deceptive. If assurance, then, can by any plan be rendered doubly sure, why not on every occasion have recourse to it?

The remarks of Mr. Bryce* on the subject of the occasional failure of Vaccination, in destroying the susceptibility to Small-pox are so well worthy of general perusal, that I shall here transcribe them.

“ It is not meant to deny that many instances have occurred in which persons have been attacked with the Small-pox, after they had been inoculated with the Cow-pox, and after they had, in the opinion of the persons who conducted the inoculation, undergone the anti-variolous process in a regular and effectual manner. But I wish it also to be remembered, that for some years after the discovery of this new inoculation, many surgeons undertook the practice without having studied, or in any way made themselves acquainted with the regular progress of the affection; and that in a vast number of instances, persons not of the medical profession, and very ignorant concerning the nature of the disease, took on themselves to

* See Practical Observations on the Inoculation of Cow-pox, &c. &c. By James Bryce, F. R. S. Ed. 8vo. 1809.

inoculate for the Cow-pox. What wonder then, if, under such circumstances, failures should then, and even now amongst persons who were at that time inoculated, frequently occur? Besides, it very frequently happens in public institutions for the gratuitous inoculation of the Cow-pox, and in private practice also, *when the operation is gratuitously performed*, that from the carelessness of parents, &c. in not returning with their children for examination, the progress of the infection is in many cases wholly unknown to the inoculator. The process may have been complete; but it may also have entirely failed; and the patient may afterwards be attacked with the Small-pox. The Cow-pox will thus be very unjustly blamed for having failed to give the promised protection, and the parents willing to screen themselves from the imputation of neglect, join in discrediting the efficacy of the new inoculation; and, though well knowing where the fault lies, tacitly acquiesce in whatever is said to its prejudice. The instances in which my colleagues, at the Institution for the gratuitous inoculation of the Cow-pox here, and myself, have experienced the truth of the above statement, as giving rise to erroneous reports respecting vaccination, are very numerous; many of these reports have caused us much time and trouble to investigate; but we have generally succeeded in ascertaining the facts, so as to give us

satisfaction by removing all blame from vaccination.

“ Again, although it be freely admitted that many instances have occurred, in which persons have suffered an attack from the Small-pox after they had been inoculated for the Cow-pox, and even after they had, in the opinion of the persons who conducted the inoculation, undergone the anti-variolous process in a regular and effectual manner; yet it must at the same time be kept in remembrance, that there are many instances on record, in which persons have at one time resisted the constitutional action of the Small-pox, though freely exposed to the infection of that disease, both by effluvia and by inoculation; and have at another subsequent time suffered from it very severely; and also that there are many instances on record, in which persons have been infected with the Small-pox in a very severe manner, *although they had at a former period actually been infected and passed through all the stages of that disease*; and these second attacks of Small-pox have taken place after the casual disease, as well as after it had been communicated by inoculation*.”

* “ We have on record *more instances* of persons suffering severely, nay, *fatally*, from what was considered a second attack of Small-pox, than from Small-pox, after what had been con-

The warmest advocates of vaccination do not hope to produce greater security by Cow-pox than can be obtained by Small-pox inoculation :— yet if the preventive power of the former can, by proper precautions, be rendered equal to that of the latter, mankind ought universally to adopt it, and gratefully acknowledge the blessing.

In 1809, Mr. Bryce published his “ Practical Observations on the Inoculation of Cow-pox,” &c. in which he made known what he deemed a certain test of perfect vaccination.

I need not here state the pathological analogy drawn from some phenomena in Small-pox, that led him to the discovery ; as I could hardly express myself upon the subject in such a manner as to be readily understood by the general reader, to whom a knowledge of the simple fact is of the greatest consequence.

In the genuine Cow-pox, in which the characteristic circular blush round the vesicle, takes place about the eighth day, *if a second inoculation be performed on the fifth or sixth day, it will be so much accelerated in its progress, as to have the circular blush formed round it within a few hours after the first, increasing with its increase, and fading as it fades.* To have the effect well

sidered perfect vaccination.” See a letter from Mr. Bryce to Dr. Duncan, jun. in the Ed. Med. and Surg. Journal for October, 1818, art. 2.

marked, the second inoculation should not be performed earlier than the fifth, or later than the sixth day.

Mr. Bryce attributes the *acceleration* of the second inoculation to the effect of the *constitutional affection* produced by the first* ; and therefore if it shall be found that *no such acceleration* takes place, but that the second inoculation proceeds by a slow progress through all its stages ; it is to be considered that *no constitutional action* has taken place from the first insertion of the Cow-pox matter : and when this is the case, the second inoculation must be regarded as the primary affection, and a third inoculation performed according to the plan laid down for conducting the second ; and thus we should go on till the proper test be obtained, or until we be convinced that the constitution completely resists the action of the Cow-pox. The secondary vesicle, where it indicates prior constitutional affection, is always smaller than the first.

After eight years experience of its efficacy, I have much pleasure in expressing the very favourable opinion I entertain of this mode of conducting inoculation for the Cow-pox, not having met with a single instance of failure where the above rules had been attended to during the progress of the disease.

* Ed. Med. Journal, vol. vi.

There are few men who deserve better of their countrymen than Mr. Bryce, who has philanthropically devoted a great part of his valuable life to the investigation of the subject of this essay, and whose important discovery, if generally acted upon, would soon dispel from the practice of Cow-pox inoculation all perplexity, doubts, and fears.

THE END.

I have been thinking of you very much lately
 and wondering how you are getting on.
 I hope you are well and happy.
 I have been very busy lately
 but I have managed to find some time
 to write you a few lines.
 I hope you will find them interesting.
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